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From: Ham-Policy Mailing List and Newsgroup <ham-policy@ucsd.edu>
Errors-To: Ham-Policy-Errors@UCSD.Edu
Reply-To: Ham-Policy@UCSD.Edu
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Subject: Ham-Policy Digest V93 #201
To: Ham-Policy

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Today's Topics:

 NQOI Case: A Proposal for Action
 NQOI Case : HF Vertical Antennas (2 msgs)

Send Replies or notes for publication to: <Ham-Policy@UCSD.Edu>
Send subscription requests to: <Ham-Policy-REQUEST@UCSD.Edu>
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Policy Digest are available
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-policy".

We trust that readers are intelligent enough to realize that all text
herein consists of personal comments and does not represent the official
policies or positions of any party. Your mileage may vary. So there.

Date: Sun, 20 Jun 93 22:37:27 GMT
From: usc!howland.reston.ans.net!agate!headwall.Stanford.EDU!nntp.Stanford.EDU!
umunhum!paulf@network.UCSD.EDU
Subject: NQOI Case: A Proposal for Action
To: ham-policy@ucsd.edu

In article <1993Jun18.204219.17649@nntpd2.cxo.dec.com> little@nuts2u.enet.dec.com
(nuts2u::little) writes:

>Right, and low antennas with lots of power is an open invitation to EMI
>problems. At 150W with a 15' beam at 35-40' I was getting into TV's,
>telephones, and radios. Drop that height another 10', increase the power
>to a kilowatt, and use a longer boom antenna, and I'll light up every
>consumer electronics product in the neighborhood. This is why I mentioned
>both antenna restrictions and EMI in my original post.

Going higher probably won't help your RFI problem. The H Plane pattern of
most beams is a fat cardioid, not the thin pencil of the E Plane pattern. So
getting up higher might drop the RF level in the direction of E plane pattern
3db at most. And, frankly, the sidelobes are significant enough so that
you'll obtain fundamental overload running any significant level of power.
In any event, having a highly visible antenna will automatically make you a

scapegoat for *any* reception problem within visual range of your tower.

--

-=Paul Flaherty, N9FZX | "The National Anthem has become The Whine."
->paulf@Stanford.EDU | -- Charles Sykes, _A Nation of Victims_

Date: Sun, 20 Jun 93 23:09:31 GMT
From: dog.ee.lbl.gov!overload.lbl.gov!agate!headwall.Stanford.EDU!
nnntp.Stanford.EDU!umunhum!paulf@network.UCSD.EDU
Subject: NQOI Case : HF Vertical Antennas
To: ham-policy@ucsd.edu

In article <25599@drutx.ATT.COM> n2ic@druwa.ATT.COM (LondonSM) writes:
>Now, let's look at suburbia. You set up your phased verticals in the
>backyard of your 1/4 acre palace.

Strawman #1: Limited Area. Limited area will negatively impact your antenna system, *no matter what you do*. In the situation you've outlined, you wouldn't have the setback for tower you're comparing.

>Your verticals are no more than 30 feet from your aluminum sided house,
>and 10 feet from a 4 foot high chain link fence. What will that do to
>your low-angle radiation ?

Strawman #2: Metallica. If you don't like aluminum siding, then change to vinyl. Chain link fences are ugly anyway, replace with wood. Or, bring your verticals up a few feet, so that the center of radiation is above the roof. Paint sky blue for effect.

>Since each of your verticals presents a different
>impedance, due to the presence of objects in the near field, how are you
>going to achieve the phase relationships needed for your array ?

Strawman #3: Impedance Mania. You really have to try hard to mess up the feed impedance of verticals, as opposed to horizontal systems, because of the prevalence of horizontal metal structures. No, it really isn't that tough to get four or even nine verticals to 50 ohms.

>How are you going to improve your ground system without
>burying a zillion radials in your backyard, AS WELL AS YOUR NEIGHBORS BACKYARD ?

Strawman #4: Those lossy 1/4 wave verticals. Use sleeve dipoles, which get you above most obstructions, are unbalanced, don't require a ground radial system, and if you really want low loss, silver plate them to skin depth. Incidentally, I'll bet the sleeve dipoles will survive winds far in excess of that which will fold the tower - yagi combination.

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--Paul Flaherty, N9FZX | "The National Anthem has become The Whine."
->paulf@Stanford.EDU | -- Charles Sykes, _A Nation of Victims_

Date: Mon, 21 Jun 1993 03:39:51 GMT
From: usc!cs.utexas.edu!asuvax!ennews!anasaz!misty!john@network.UCSD.EDU
Subject: NQ0I Case : HF Vertical Antennas
To: ham-policy@ucsd.edu

n2ic@druwa.ATT.COM (LondonSM) writes:

]Yes, indeed, ideal verticals, over an excellent ground (i.e. sea water),
]with no obstructions, can perform well.

]Now, let's look at suburbia. You set up your phased verticals in the
]backyard of your 1/4 acre palace. Your verticals are no more than 30
]feet from your aluminum sided house, and 10 feet from a 4 foot high
]chain link fence. What will that do to your low-angle
]radiation ? Since each of your verticals presents a different
]impedance, due to the presence of objects in the near field, how are you
]going to achieve the phase relationships needed for your array ?
]How are you going to improve your ground system without
]burying a zillion radials in your backyard, AS WELL AS YOUR NEIGHBORS BACKYARD ?

Well, if you live in a 1/4 acre palance, you are going to have troubles
anyway. You don't have room to effectively guy a tower, and the zoning
authorities are gonna bitch because you don't have clearance for it
to fall only on your own property.

As far as the technical issues.... you can create a decent ground, and
where you can't put down long radials, you can at least use resonated
radials. Alternately, you can use a vertical colinear array or some
other non-ground plane antenna. It's higher, but its thin and hard
to see.

As far as the screwy phase relationships, that's where we need a good
product on the market. One can monitor the antenna feed currents and
measure the actual phase (radio stations I worked at in the '60s did
that). A clever computerized matching system could do all this
automagically.

My point is that the optimal antenna isn't likely to occur on a small lot

in a high density neighborhood no matter what you do.

]Let's not fool ourselves, an EFFECTIVE vertical array is NOT a limited space,
]low impact antenna. A 3 element tribander at 50 feet is going to beat the
]pants off of any ground-mounted vertical array you can put down in suburbia.

All it really requires is about the same space as a beam. You may have
to raise the antenna bases a bit to reduce interaction with nearby
objects.

The biggest problem with such a system is RFI.

--

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"Modern liberals are the termites in the structure of our society."

John Moore

Date: Mon, 21 Jun 1993 05:23:35 GMT
From: swrinde!cs.utexas.edu!asuvax!ennews!enuxva.eas.asu.edu!
shandrow@network.UCSD.EDU
To: ham-policy@ucsd.edu

References <1993Jun17.073754.2670@ke4zv.uucp>,
<1993Jun17.200211.5617@leland.Stanford.EDU>, <1993Jun18.135615.9568@ke4zv.uucp>
Subject : Re: NQ0I Case: A Proposal for Action

How about forming a coalition between the land mobile and amateur services
to solve the 440/1 ghz problems then? That would seem to be more effective
than fighting separate battles.

End of Ham-Policy Digest V93 #201
